

CLAIMS

We claim:

1. An electric motor, in particular an external rotor motor, comprising a stator which is attached by means of latching elements to a motor carrier using a plug-in joining operation, wherein elastic elements for isolating vibration are arranged in the connecting region between the stator and the motor carrier in such a way that the stator is connected to the motor carrier only indirectly by means of the elastic elements.

2. The electric motor as claimed in claim 1, further comprising the stator and the motor carrier having a stator connecting section and a motor connection section which are coaxial with respect to the axis of the motor and plugged one over the other or one into the other with radial spacing, the elastic elements each sitting with radial and axial prestress in a gap region (26) formed between the connecting sections, and being arranged distributed in a radially symmetrical fashion.

3. The electric motor as claimed in claim 2, wherein the stator connecting section and the motor connecting section comprise essentially annular web sections which extend axially, the motor connecting section of the motor carrier engaging over the stator connecting section of the stator on the outside.

4. The electric motor as claimed in claim 2, wherein the elastic elements comprise individual, essentially planar shaped elements, each with inner and outer surfaces which are shaped to match corresponding abutment regions of the motor connecting section and the stator connecting section .

5. The electric motor as claimed in claim 3, wherein each elastic element is held on the external circumference of the stator connecting section using securing means in such a way that a positively locking connection is provided in the axial direction, and at least one frictionally locking connection is provided in the radial and circumferential directions.

6. The electric motor as claimed in claim 5, wherein the securing means comprise a tongue/groove connection which extends in the circumferential direction and has a clippable frictionally locking connection.

7. The electric motor as claimed in claim 3, wherein the motor carrier is pushed with its motor connecting section over the elastic elements in a frictionally locking fashion, each elastic element being held in the pushed-on state in a positively locking fashion in the axial direction between an abutment step within the motor connecting section and a spring clamp which is fitted on as a latching element.

8. The electric motor as claimed in claim 7, wherein each spring clamp engages over the connecting section on the outside in the axial direction and engages, with a supporting section at one end, in the motor connecting section in the radial and axial directions in order to abut against the associated elastic element, and is latched with a latching section at the other end to the motor connecting section .

9. The electric motor as claimed in one of claim 2, wherein the stator connecting section is a component which is integrally formed onto a stator insulation means composed of duroplast.

10. The electric motor as claimed in claim 2, wherein the stator connecting section additionally forms part of an inner electronics housing for holding motor control electronics , an inner housing cap being connected to the stator connecting section by means of latching elements which can be joined axially.

11. The electric motor as claimed in claim 10, wherein a circumferential seal, composed of a soft elastic plastic and is molded in particular onto the housing cap, is arranged between the housing cap and the stator connecting section.

12. The electric motor as claimed in claim 10, wherein a printed circuit board is arranged within the inner electronics housing and is located perpendicularly with respect to the axis of the motor.

13. The electric motor as claimed in claim 10, wherein all the necessary internal electrical connections, between the stator windings and the motor control electronics are made via plug-type connections which can be joined axially.

14. The electric motor as claimed in claim 1, wherein an external connecting cable is connected by means of a connecting plug which can be plugged in axially.

15. The electric motor as claimed in claim 10, wherein the motor control electronics have an interface for connecting an external control line, the interface comprising a plug-type connection which can be joined axially and being accessible through an opening in the inner electronics housing, and the opening being closed off by a detachable closure element .

16. The electric motor as claimed in claim 10, wherein a mounting opening which is closed off with a closure part is formed within the stator between the region of the inner electronics housing and a rotor bearing .

17. The electric motor as claimed in claim 16, wherein the closure part is composed of an elastic material and abuts the printed circuit board by means of molded-on projections (94) in order to provide support against vibrations of the printed circuit board .

18. The electric motor as claimed in claim 10, wherein the motor control electronics have a rotor position sensor, which projects into the stator and is surrounded by an electrically insulating, cup-like insulating means .

19. The electric motor as claimed in claim 2, wherein the motor carrier comprising a holding flange with a bottom wall and the stator connecting section which is integrally connected thereto.

20. The electric motor as claimed in claim 2, wherein the motor carrier comprising a wall ring with an pot-like inner part, which has the motor connecting section, and an outer ring which is connected thereto by means of spoke elements .